



# UNITED STATES PATENT AND TRADEMARK OFFICE

8  
UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/698,441	11/03/2003	Se Kit Yuen	Q77986	1528
23373	7590	10/31/2007	EXAMINER	
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			CONLEY, SEAN EVERETT	
			ART UNIT	PAPER NUMBER
			1797	
			MAIL DATE	DELIVERY MODE
			10/31/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/698,441	YUEN, SE KIT
	Examiner	Art Unit
	Sean E. Conley	1797

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 08 August 2007 and 24 August 2007.
- 2a) This action is FINAL.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 3-5, 7 and 9-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 3-5, 7 and 9-11 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) Notice of Informal Patent Application
- 6) Other: \_\_\_\_\_

## FINAL ACTION

### ***Response to Amendment***

1. The amendments filed August 8, 2007 and August 24, 2007 have been received and considered for examination. Claims 3-5, 7 and 9-11 are pending.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 3-5, 7 and 9-11 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Specifically, claim 9 includes the new limitation "for forcing the air from the air inlet once around the ultraviolet band C radiation tube". There is no support for this limitation in the specification and therefore it is considered to be new matter. Claims 3-5, 7 and 10-11 are also rejected since they depend from and include all of the limitations of independent claim 9.

***Claim Rejections - 35 USC § 103***

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yuen et al. (GB 2301179 A) in view of Taylor et al. (U.S. Patent No. 6,911,186 B2) and Palestro et al. (U.S. Patent No. 6,264,888 B1).

Regarding claim 9, Yuen et al. discloses a portable photoelectric air cleaner comprising: a main body (cover (24) with base (22)) of pyramidal shape, the main body having an interior portion, the interior portion including an extractor fan (36) disposed at an angle to the flat base and orthogonal to the direction of air flow at the air outlet (located at air outlet grill (14)), a transformer (44), a circuit board (42), an ultraviolet ray tube (32) which includes ultraviolet light in the UVA, UVB, and UVC range and the tube (32) being located within the interior portion of the air cleaner and proximate to the air outlet, a cathode high voltage discharge fiber thread (40) fixed to a front face of the air outlet exhaust grid (14), and an air collector (filter holder (26)) formed within the interior portion between the air inlet (located at filter cover (30)) and the radiation tube (32). The extractor fan (36) is disposed between the ultraviolet radiation tube (32) and the air outlet portion (grid (14)). The air collector is comprised of a space which is defined by an air collecting wall (wall containing air holes in filter holder (26)) and a blocking wall (sidewalls of filter holder (26)) (see figure 2; page 4, line 8 to page 5, line 27).

However, Yuen et al. does not disclose a portable photoelectric air cleaner comprising a semicircular body having front, top and rear portions forming a continuous curve and defining a curve front face with an air outlet portion and a curved rear face with an air inlet portion or an air collector as recited in applicant's claim 9.

Taylor et al. discloses an air purification device for removing particles from an air by subjecting an airflow to ultraviolet radiation from a germicidal lamp within the device. The device comprises a housing (210) that includes a semicircular body having front (260), top (217), and rear portions (see air intake (250)) forming a continuous curve (oval shape of the device as shown in figure 3A) and defining a curved front face with an air outlet portion (outlet (260)) and a curved rear face with an air inlet portion (air intake (250)) (see figures 3A-4; abstract; col. 7, line 50 – col. 8, line 25).

Therefore, it would have been an obvious matter of design choice to make the device semi-circular in shape as taught by Taylor et al. since the court has held that a claimed shape is a matter of choice which a person of ordinary skill in the art would have found obvious absent persuasive evidence that the particular configuration of the claimed shape was significant (see MPEP 2144.04, Section IV).

Palestro et al. discloses an ultraviolet germicidal apparatus for destroying airborne pathogenic bacteria. The apparatus (10) comprises a housing (40) having an air intake duct (42) and an air discharge duct (44), a blower (120) and a set of ultraviolet lights (150) located in a sterilization chamber (180) within the

housing (40) (see figures 1 and 2; see col. 7, lines 32-57). The sterilization chamber (180) is baffled in the upstream side by an intake baffle (182) and on the downstream side by a pair of exhaust baffles (184 and 187) extending from the side portions of the housing (40). These baffles function as blocking walls and air collecting walls to prevent ultraviolet light from leaking from the sterilization chamber (180) out of the intake duct (42) or the discharge duct (44) and into the environment where it could damage the skin and eyes of people. The baffles (182, 184, and 187) also improve the circulation of the air over the ultraviolet bulbs by directing the air flow across the bulbs. Palestro further discloses that at least portion of the air from the inlet is forced around the ultraviolet radiation tube once as indicated by arrows in figure 2 showing the flow path through the apparatus as well as the disclosure that the air circulates around the ultraviolet bulbs twice (see figure 2; see col. 8, lines 38-65; see col. 9, lines 19-43).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Yuen et al. and place the ultraviolet lamp in the middle of the device and include air collecting walls (184, 187) extending from side portions of the body and a blocking wall (182) spaced apart and upstream from the air collecting walls with an air inlet defined by the space between the blocking wall and the air collecting walls as taught by Palestro et al. in order to direct and concentrate the air flow towards the ultraviolet lamp inside the device and also prevent a users eyes from being

exposed to harmful ultraviolet radiation that would be emitted through the inlet or outlet of the device.

Regarding claim 10, Yuen et al. discloses that the fan extractor fan (36) is disposed at an angle to the flat base (22) and orthogonal to the direction of air flow at the air outlet (located at air outlet grill (14)) (see figure 2). Yuen et al. also discloses that the radiation tube (32) is disposed at an angle to the flat base (22) and shown to be orthogonal to the direction of air flow at the air outlet portion (grill (14)) (see figure 2).

Regarding claim 11, Yuen et al. discloses that the air inlet (located at filter cover (30)) is disposed on the rear end of the main body and has an air input gridiron (filter cover (30)) provided with a dustproof gridiron (filter holder (26)) which has partitions, and a dust screen (foam filter (28)) and a dust cover for the air inlet (see figure 2; page 4, lines 17-25).

6. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yuen et al. in view of Taylor et al. and Palestro et al. as applied to claim 9 above, and further in view of Cartellone (U.S. Patent No. 5,837,020) and Bullard (U.S. Patent No. 2,085,249).

Yuen et al. in view of Taylor et al. and Palestro et al. disclose the claimed invention except for a portable device that includes a movable handle and a movable gallus fixed to the body of the device by a buckle.

Cartellone discloses a portable room air cleaner (10) that includes a handle (154) that is mounted to a top section (106) of the device so that the user

can conveniently move the air cleaner (10) to various locations within a room or building. Handle (154) is mounted to top section (106) by a handle mount (156) which allows handle (154) to pivot on top section (106) such that the handle may be pivoted downwardly into the slot to maintain the handle in a secure position (see figure 1; col. 12, lines 9-16). This reference has been relied upon to teach that it is well known to use a movable handle on a portable air treatment device.

Bullard discloses a portable air respirator apparatus for supplying conditioned air to a user comprising a breathing chamber (3) that is supported on the body of the wearer by a harness preferably comprising a waste encircling strap (6) and a pair of shoulder straps (7). The shoulder straps (7) are detachably connected to the breathing chamber (3) of the air purification apparatus by suitable buckles (8) (see figure; col1, line 54 to col. 2, line 12). This reference has been relied upon to teach that it is well to use a strap connected by a buckle on a portable air treatment device.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to further modify the invention of Yuen et al. and include a movable handle and a movable strap connected to the device by a buckle a taught by Cartellone and Bullard in order to support the device on the body of the user (see col. 1, line 55 of Bullard) and also provide a handle for moving the device from various locations in a room or building (see col. 12, lines 9-11 of Cartellone).

7. Claims 3, 5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yuen et al. in view of Taylor et al. and Palestro et al. as applied to claim 9 above, and further in view of Sham et al. (U.S. Patent No. 6,464,760 B1).

Yuen et al. in view of Taylor et al. and Palestro et al. disclose the claimed invention except for the use of batteries to power the air purification device.

Regarding claim 3, Yuen et al. discloses a circuit board located on a supporting frame in the housing. The circuit board comprises a transformer (44), power source lines, power supply generator (see figures 4-5), and an electronic switcher. However, Yuen et al. fails to teach batteries used to power the device instead of a conventional AC power source such as power from a power cord (46).

Sham et al. discloses an apparatus for purifying air to by exposing an air stream from a surrounding area to ultraviolet radiation. Sham et al. further discloses in the preferred embodiment of the invention, a free standing, self-contained unit powered from a conventional AC source, although the unit could be operated from storage batteries (DC source) rather than an AC source; having a housing with a removable front cover, an inlet opening and an outlet opening, filter media to filter an air stream which flows from the inlet opening to the outlet opening; an ultraviolet light source to provide germicidal radiation to the air stream and to a surface of a filter medium, and a motorized fan for maintaining a flow of air through the housing from the inlet opening to the outlet opening. The unit is compact and attractive, and has a high efficiency of air purification and

sanitization using a relatively short airflow (see col. 1, lines 34-51). This reference has been relied upon to teach that it is well known to substitute a conventional AC source of power with a DC power source such as storage batteries in order to increase the portability of the device.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to further modify the invention of Yuen et al. and replace the conventional AC power source (power cord (46)) with a storage battery (DC power source) as taught by Sham et al. in order to increase the portability of the device.

Regarding claims 5 and 7, Sham et al. discloses an apparatus for purifying air to by exposing an air stream from a surrounding area to ultraviolet radiation. Sham et al. further discloses in the preferred embodiment of the invention, a free standing, self-contained unit powered from a conventional AC source (although the unit could be operated from storage batteries (DC source) rather than an AC source); having a housing with a removable front cover, an inlet opening and an outlet opening, filter media to filter an air stream which flows from the inlet opening to the outlet opening; an ultraviolet light source to provide germicidal radiation to the air stream and to a surface of a filter medium, and a motorized fan for maintaining a flow of air through the housing from the inlet opening to the outlet opening. The unit is compact and attractive, and has a high efficiency of air purification and sanitization using a relatively short airflow (see col. 1, lines 34-51). This reference has been relied upon to teach that it is well known to

substitute a conventional AC source of power with a DC power source such as storage batteries in order to increase the portability of the device.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to further modify the invention of Yuen et al. and replace the conventional AC power source (power cord (46)) with a storage battery (DC power source) as taught by Sham et al. in order to make the device portable. Furthermore, it would have been obvious that the storage batteries would be attached to a DC input of the device since it is known that the batteries are a DC power source while the components of the air purification run on AC power and therefore, the batteries would have to be attached to a DC input of a voltage converter on the circuit board located within the housing of the device in order to convert the voltage for use by the fan, ultraviolet radiation source, and fiber discharge line.

### ***Response to Arguments***

8. Applicant's arguments filed August 8, 2007 and August 24, 2007 have been fully considered but they are not persuasive.

The Applicant first argues that references fail to teach the claim 9 feature of "an air collector [that] is comprised of a space which is defined by air collector walls extending from respective side portions of said body and a blocking wall wherein said blocking wall is spaced apart and upstream from said air collector walls and having an air inlet defined by said air collector walls and said blocking wall". More specifically, the Applicant argues that because Palestro discloses

that the air passes over the top of the air intake baffle 182 and into the sterilization chamber and is blocked on the opposite side by the baffle 184, it fails to disclose the air collector of claim 9. The Examiner respectfully disagrees. As stated in the office action mailed on May 1, 2007, Palestro clearly teaches a sterilization chamber (180) that is baffled on the upstream side by an intake baffle (182) (a blocking wall) and on the downstream side by a pair of exhaust baffles (184 and 187) (air collector walls) extending from the side portions of the housing (40). In addition, exhaust baffle (187) functions to at least partially collect some of the air flow passing through the apparatus.

The Applicant further argues that when the references are viewed for the whole of their teachings, one having ordinary skill would not have been motivated to combine the references, because Palestro teaches that the air is baffled and circulates around the ultraviolet lights and that such air is required to circulate over the ultraviolet bulbs twice. That is, if Palestro provided a "blocking wall [that] is spaced apart and upstream from said air collector walls and having an air inlet defined by said air collector walls and said blocking wall" the air would not be baffled or be able to circulate the air around the ultraviolet bulbs twice. The Examiner respectfully disagrees. The intake baffle (182) of the apparatus functions as a blocking wall and directs the air flow into the space housing the ultraviolet bulbs. The exhaust baffles (184 and 187) each function as air collecting walls since they each prevent at least a portion of the air from exiting before being exposed to the ultraviolet lamps (see figure 2). Furthermore, one of ordinary skill in the art would have been motivated to combine the teachings of

Palestro with Yuen et al. and Taylor et al. and incorporate blocking walls (intake baffles) and collecting walls (exhaust baffles) in order to prevent the harmful ultraviolet from escaping the apparatus and into a users eye. Additionally, Palestro discloses that at least portion of the air from the inlet is forced around the ultraviolet radiation tube once as indicated by arrows in figure 2 showing the flow path through the apparatus and as indicated by the disclosure that the air circulates around the ultraviolet bulbs twice (see figure 2; see col. 8, lines 38-65; see col. 9, lines 19-43).

Claims 3-5, 7 and 9-11 remain rejected under 35 U.S.C. 103(a) and 35 U.S.C. 112, first paragraph as stated above.

### ***Conclusion***

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will

the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sean E. Conley whose telephone number is 571-272-8414. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gladys Corcoran can be reached on 571-272-1214. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SEC *Rae*  
October 25, 2007



GLADYS JP CORCORAN  
SUPERVISORY PATENT EXAMINER